

Incremental Encoders

Standard Large hollow shaft, optical	5821 (Hollow shaft)	Push-Pull / RS422
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Optimised proportions, optimised costs:

With an overall diameter of just 58 millimetres the series 5821 boasts a hollow shaft of up to 28 millimetres diameter.



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Temperature range	Shock / vibration resistant	Magnetic field proof	Short-circuit proof	Reverse polarity protection

Adaptable

- Through hollow shaft from 16 mm up to 28 mm
- With cable connection or M12 connector
- High resolution up to 5000 PPR

Order code
Hollow shaft

8.5821	.	1	X	X	X	.	X	X	X	X
Type		a	b	c	d		e			

- a Flange**
1 = with spring element, ø 58 mm [2.28"]
- b Hollow shaft**
K = ø 16 mm [0.63"]
C = ø 20 mm [0.79"]
6 = ø 24 mm [0.94"]
5 = ø 25 mm [0.98"]
3 = ø 28 mm [1.10"]
(other on request)

- c Output circuit / Power supply**
1 = RS422 (with inverted signal) / 5 V DC
4 = RS422 (with inverted signal) / 8 ... 30 V DC
3 = Push-pull (with inverted signal) / 8 ... 30 V DC
- d Type of connection**
1 = radial cable, 2 m [6.56'] PVC cable
E = M12 connector, 8-pin, radial

- e Pulse rate**
50, 60, 100, 125, 250, 400, 500, 512, 960, 1000, 1024, 2000, 2048, 5000
(e.g. 100 pulses => 0100)
- Other pulse rates on request

Connection technology		Order No.
Connector, self-assembly (straight)	M12 female connector with coupling nut	05.CMB 8181-0
Cordset, pre-assembled	M12 female connector with coupling nut, 2 m [6.56'] PVC cable	05.00.6041.8211.002M

Further accessories can be found in the accessories section or in the accessories area of our website at: www.kuebler.com/accessories
Additional connectors can be found in the connection technology section or in the connection technology area of our website at: www.kuebler.com/connection_technology

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Technical data

Mechanical characteristics	
Speed	max. 2500 min ⁻¹
Moment of inertia	approx. 3.5 x 10 ⁻⁶ kgm ²
Starting torque – at 20°C [68°F]	< 0.1 Nm
Weight	approx. 0.4 kg [14.11 oz]
Protection acc. to EN 60529	IP64
Working temperature range	
at max. speed 2000 min ⁻¹	-20°C ... +70°C [-4°F ... +158°F]
at max. speed 2500 min ⁻¹	-20°C ... +60°C [-4°F ... +140°F]
Material	hollow shaft steel
Shock resistance acc. to EN 60068-2-27	1000 m/s ² , 6 ms
Vibration resistance acc. to EN 60068-2-6	100 m/s ² , 35...2000 Hz

Electrical characteristics		
Output circuit	RS422	Push-Pull (7272 compatible)
Power supply	5 V DC ±5% / 8 ... 30 V DC	8 ... 30 V DC
Power consumption with inverted signal (no load)	typ. 40 mA / max. 90 mA	typ. 40 mA / max. 100 mA
Permissible load/channel	max. ±20 mA	max. ±40 mA
Pulse frequency	max. 300 kHz	max. 200 kHz
Signal level	HIGH min. 2.5 V LOW max. 0.5 V	min. +V - 3 V max. 2.5 V
Rising edge time t_r	max. 200 ns	max. 1 μs
Falling edge time t_f	max. 200 ns	max. 1 μs
Short circuit proof outputs ¹⁾	yes	yes
Reverse polarity protection of the power supply	yes	yes
CE compliant acc. to	EMC guideline 2004/108/EC	
RoHS compliant acc. to	guideline 2002/95/EC	

Terminal assignment

Output circuit	Type of connection	Cable (isolate unused wires individually before initial start-up)									
1, 3, 4	1	Signal:	0 V	+V	A	\bar{A}	B	\bar{B}	0	$\bar{0}$	\perp
		Cable colour:	WH	BN	GN	YE	GY	PK	BU	RD	shield
Output circuit	Type of connection	M12 connector, 8-pin									
1, 3, 4	E	Signal:	0 V	+V	A	\bar{A}	B	\bar{B}	0	$\bar{0}$	\perp
		Pin:	1	2	3	4	5	6	7	8	PH ²⁾

- +V: Encoder power supply +V DC
- 0 V: Encoder power supply ground GND (0 V)
- A, \bar{A} : Incremental output channel A
- B, \bar{B} : Incremental output channel B
- 0, $\bar{0}$: Reference signal
- PH \perp : Plug connector housing (Shield)

Top view of mating side, male contact base



M12 connector, 8-pin

1) If supply voltage correctly applied.
2) PH = Shield is attached to connector housing

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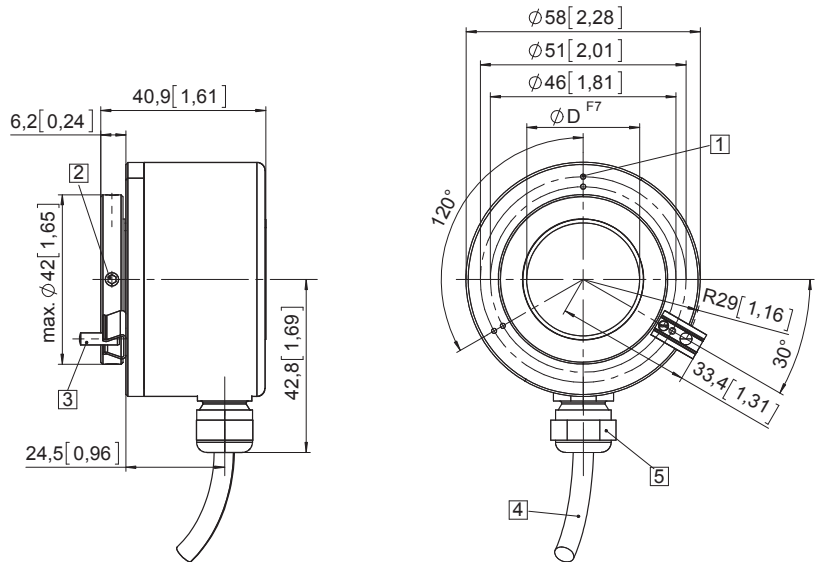
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Dimensions

Dimensions in mm [inch]

Flange with spring element, \varnothing 58 [2.28] Cable version, connection type 1

- 1 M1.6 / 5 [0.2] deep
- 2 4 x socket set screw M4x6 DIN 913
- 3 Cylindrical pin 3m6x12 DIN 6325 included
- 4 Cable length 2 m [6.56']
- 5 Cable gland PG7



Flange with spring element, \varnothing 58 [2.28] M12 connector version, connection type E

- 1 M1.6 / 5 [0.2] deep
- 2 Cylindrical pin 3m6x12 DIN 6325 included
- 3 4 x socket set screw M4x6 DIN 913
- 4 Connector M12

